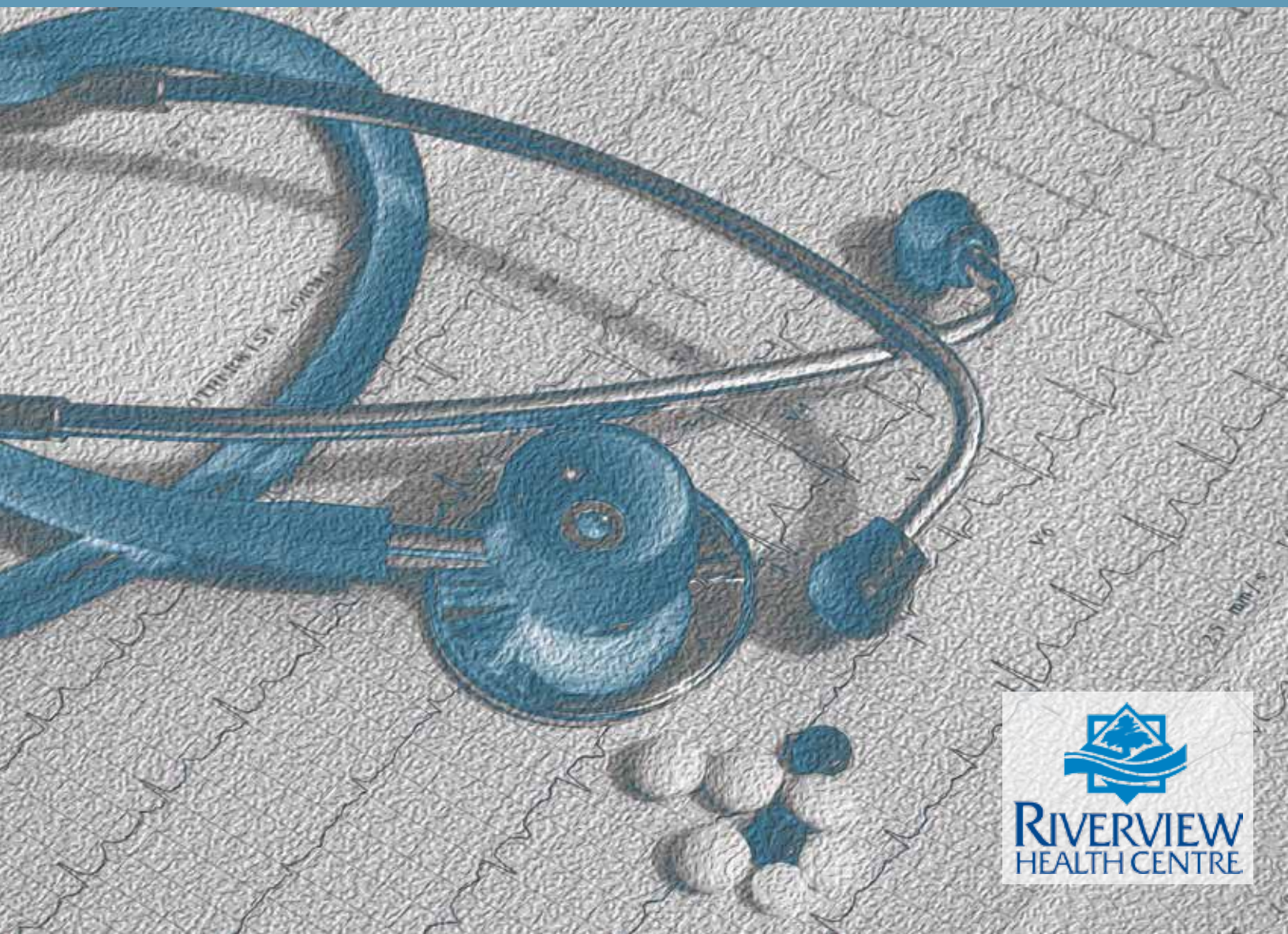
RESEARCH AT RIVERVIEW HEALTH CENTRE:

Enhancing Patient Care and Quality of Life



RIVERVIEW HEALTH CENTRE

RESEARCH AT RIVERVIEW HEALTH CENTRE:

Enhancing Patient Care and Quality of Life

During this past year, the world has witnessed the importance of research in health care.

Not that long ago, COVID-19 did not exist. As this virus spread throughout the world, dedicated investigators in many countries built upon research techniques conducted over decades to uncover its mysteries. Ultimately, they developed a variety of vaccines to protect life.

Riverview Health Centre has long known the vital role research plays in creating knowledge that will impact treatment protocols, thus enhancing patient care and quality of life. Research is part of daily life at the Centre, where it is supported financially through regular competitions. Researchers are invited on site, and space is provided for them to conduct their projects. Results are shared with both staff members and the broader community through formal links with universities and their Riverview Health Centre Affiliates.

Despite COVID restrictions, a number of researchers were able to bring their projects to completion during 2020-2021. The authors of these studies include established university investigators, graduate students, medical residents and staff at Riverview. Some of their projects could be described as brief investigations, while others are complex, lasting years and including sites across Canada.

This publication presents 13 completed or ongoing research projects at Riverview Health Centre. Participants include patients who are lifetime residents at the Centre, along with others who will be discharged home. Some participants are individuals who currently live in the community. The areas of investigation are dementia, health care systems and protocols, stroke rehabilitation and mindfulness.

Science is a guiding light for quality care, and Riverview Health Centre pledges to uphold its importance by supporting research at the Centre, throughout Manitoba and across Canada.

Aspects of Dementia

Riverview Health Centre is at the forefront of care for people with dementia and their families. With the development of its Alzheimer Centre of Excellence, Riverview has kept pace with the sea of changes in best practices for this special group of residents. It intends to continue to do so by welcoming researchers, such as those featured here, who are investigating how enhanced technology and service delivery can further improve quality of life for people living with this disease.

Why Do Older People Fall?

Falls in older adults are a cause for concern – they can result in bruising, broken bones and, in worse case scenarios, temporary or permanent incapacitation.

The good news is that falls in older people are preventable, especially if information is available about what puts a person at risk. Figuring out why an older person may fall is a critical step in reducing falls and fall-related injuries in older Canadians.

Dr. Sina Mehdizadeh, a postdoctoral researcher at Toronto Rehabilitation Institute, University Health Network, aims to do just that in his research with older people with dementia. Responding to an international call for candidates, he received funding through the Riverview Research Competition, along with AGE_WELL NCE, to carry out his project at the Institute.

"We decided to focus on people with dementia because they have a higher risk of falling than older people not affected by the disease," he explains.

In past studies, analysis of older adults walking has proven to be a good discriminator of fallers and non-fallers. With that in mind, Dr. Mehdizadeh chose to investigate an inexpensive vision-based system that looks at the walking quality of the study participants.

In traditional lab-based assessments, researchers combine the use of expensive cameras and/or sensors placed on the legs or waists of the participants to record their walking. The sensors identify the position of the lower body joints, and previously developed computer algorithms are used to quantify the movement.

While lab-based technologies are not new, there are limitations to their use. The technology is costly and must be used in a lab, so participants' gaits must be studied in a contrived environment rather than in everyday life settings. As well, the algorithms in use have only been demonstrated in healthy young adults.

In his study, Dr. Mehdizadeh is using low-cost vision-based systems that use normal, inexpensive cameras to record participants' walking as they go about their day on the units where they live. He hopes to validate that the output of the cameras meets the gold standards of the expensive technology usually used.

Sina Mehdizadeh

"We will compare measures from the cameras and the sensors," he says. "They should be equal, and if they are, we'll know we can use inexpensive cameras in a normal environment to analyze participants' walking and their risk of falling."

If the measures from the cameras and the sensors are different, the next step will be to develop a new algorithm to accurately quantify walking in older adults with dementia.

The goal is to find a way to easily, inexpensively and accurately measure walking in older adults so their risk of falling can be predicted, leading to individualized prevention protocols.

Dr. Mehdizadeh's project is being carried out under the supervision of Dr. Babak Taati, a scientist at KITE, the research arm of the Toronto Rehabilitation Institute at the University Health Network in Toronto.

INVESTIGATORS:

Sina Mehdizadeh, PhD, KITE, Toronto Rehabilitation Institute, University Health Network
Babak Taati, PhD, KITE, Toronto Rehabilitation Institute, University Health Network
Andrea Iaboni, PhD, KITE, Toronto Rehabilitation Institute, University Health Network

Identifying the Challenges of Young Onset Dementia

When someone under the age of 65 is diagnosed with dementia, it is known as young onset dementia. This group is of interest to Sheila Novek, PhD candidate in Community Health Sciences at the University of Manitoba.

"There is evidence that these individuals – some who may only be in their 50s, or even younger – face barriers across the spectrum of care, from getting a diagnosis to obtaining the supports they need," says Novek.

Novek wanted to identify the gaps in service for this group and their families. In her study, called *Health and Support for People Living with Young Onset Dementia*, she interviewed 36 people to learn about their experiences and to understand their views. Six of them were persons with young onset dementia, 14 were family members and 16 were health professionals and service providers. Riverview Health Centre was helpful in providing assistance with recruiting these participants.

From the wealth of information gathered, Novek identified 11 key results that describe the experiences of the interviewees as they attempt to navigate life with young onset dementia.

For each of the findings, she developed recommendations to improve the situation, thus paving the way for future change.

Novek was not surprised to find that families have a hard time getting the help they need, mainly because the system, which focuses on older people with dementia, lacks dedicated services for young onset dementia. In talking with study participants, it became obvious that no clear pathway exists for people to get assessed and diagnosed.

One family reported that it took four long years before they actually got a diagnosis. "It was harsh. I don't even know how we made it through," she said.

Difficulty getting the help needed is exacerbated by fragmented and uncoordinated services. There is no one-stop-shop where people with young onset dementia and their families can go for multidisciplinary help from such areas as neurology, psychiatry, social work and nursing – not to mention support in applying for disability benefits, setting up long term care or obtaining family counselling.

Sheila Novek

One study participant, a health service provider, put it this way: "I don't think the system recognizes how complex things can be for younger people (with dementia)."

Such comments go hand-in-hand with reports from study participants that family-centred services are lacking.

"The entire family is profoundly impacted by young onset dementia, highlighting the need for psychological and social supports to help work through all the changes as the disease progresses," explains Novek. "There are so many things for families to think about, from financial losses to finding help when family caregivers are working to managing aggressive reactions – it's overwhelming."

To address these issues and other key findings, Novek points to the need to improve awareness and recognition of young onset dementia. With attention to that overriding message and to the recommendations put forth in her study, she hopes understanding of the disease will lead to closing the gaps in service. This should result in more satisfactory experiences for those with young onset dementia and their families as they attempt to get help at all stages of their journey.

INVESTIGATORS:

Sheila Novek, MSc, PhD(c), Department of Community Health Services, University of Manitoba

Verena Menec, PhD, Department of Community Health Services, University of Manitoba

UNOBTRUSIVE CAMERA-BASED MONITORING
Keeps Residents Safe on Dementia Units


Mohamed-Amine Choukou

State-of-the-art units for people with dementia strive to give residents as much freedom of movement as possible. However, what happens if they experience a fall? What if they react to a situation they don't understand by striking out or otherwise acting in a way that could be dangerous to themselves or others?

It's up to staff members on the units to be watchful, but the fact is, they don't have eyes in the backs of their heads. Much effort has to be exerted to ensure all residents are safe at all times.

Dr. Mohamed-Amine Choukou is exploring a novel solution to this issue. As a researcher who investigates uses of technology in health care, he is looking into how cameras could make dementia units safer for residents without jeopardizing their privacy.

The Assistant Professor of Occupational Therapy at University of Manitoba's College of Rehabilitation Sciences is working on his idea with his research team. Using 3D depth cameras, the team is developing a software program that will identify types of movement, different objects in the environment and the location of the resident.

"We are programming the software to recognize many different movements – such as falling, tripping or lunging with a knife – by enacting and filming them," explains Dr. Choukou. "The software will then recognize dangerous events and map the video data to look like stick figures without even using the video files. That way, residents are not identified."

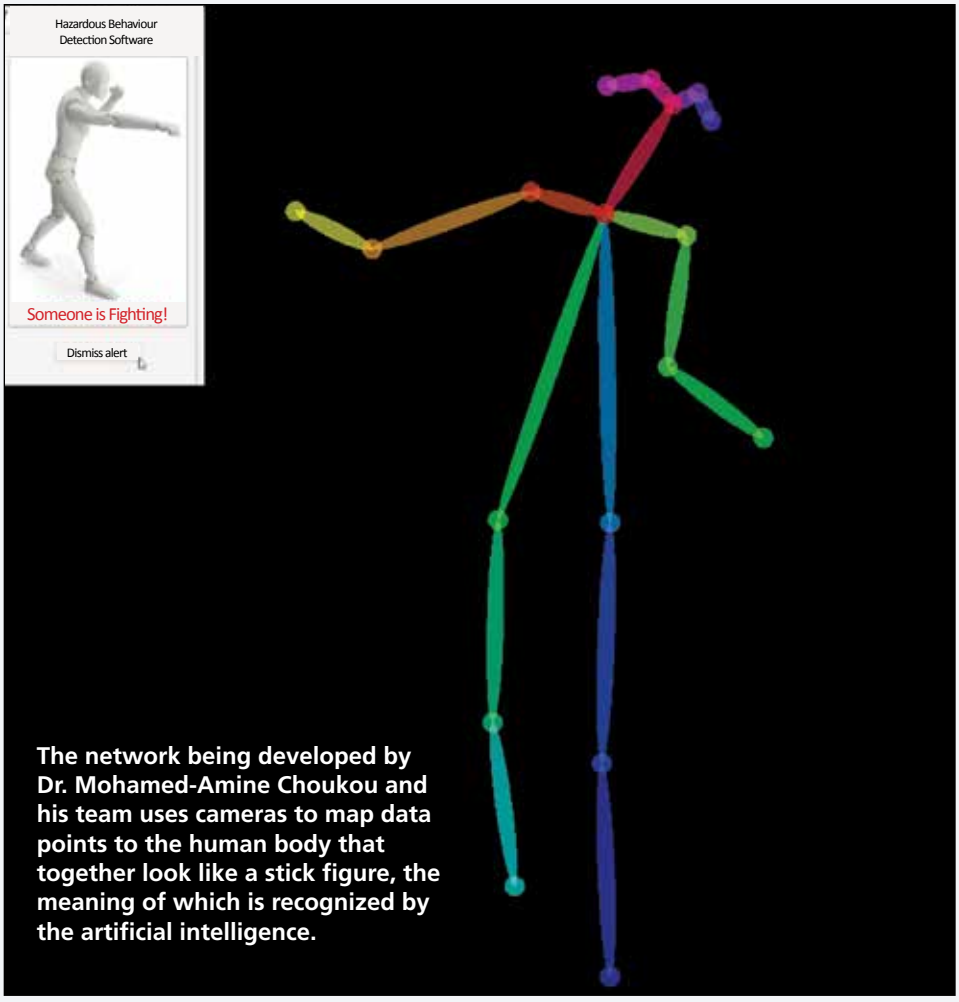
If the movement or object, or combination of movement and object (such as throwing a chair), is identified by the software as hazardous, the system would alert staff members, who can immediately investigate. The computer will record what, when and where the event happened for further investigation, such as discussing the incident with family members.

Riverview's Alzheimer Centre of Excellence staff participated in focus groups led by Dr. Choukou to identify the need for such technology on the unit. The groups noted several potential benefits.

For staff, the ability to respond quickly to dangerous situations, while at the same time reducing their workload, means they would feel confident about the security of their residents. This would help to reduce stress and uncertainty.

For residents, the technology means that immediate help would be available should they fall, slip or react to the environment in a hazardous way. For families, knowing that their loved one is being monitored for safety and wellbeing would provide peace of mind.

Once the technology being developed by Dr. Choukou's team is validated, it will be piloted on Riverview's dementia unit.



The network being developed by Dr. Mohamed-Amine Choukou and his team uses cameras to map data points to the human body that together look like a stick figure, the meaning of which is recognized by the artificial intelligence.

INVESTIGATOR:

Mohamed-Amine Choukou, PhD, Department of Occupational Therapy, College of Rehabilitation Sciences, University of Manitoba; Biomedical Engineering Program, University of Manitoba

Health Systems and Protocols

Exemplary health care isn't fly-by-night, and it doesn't happen overnight. Rather, comprehensive health care protocols develop over time through investigations by researchers who identify areas for improvement. Results from their studies culminate in positive change in care delivery. Riverview is pleased to be involved with the researchers featured here, who are striving to enhance protocols in the areas of chronic care, community rehabilitation, end of life care and management of hip fractures.

Evaluating Winnipeg's Chronic Care Program

Malcolm Doupe

Health care reform is happening across Canada as provincial governments and frontline health professionals strive to provide the best, most efficient care for patients.

In Manitoba, Winnipeg's chronic care program is just one area of health care delivery being reviewed by the Winnipeg Regional Health Authority (WRHA). For an evaluation of the program, WRHA turned to Dr. Malcolm Doupe, a health services researcher and associate professor in the Department of Community Health Sciences within the Rady Faculty of Health Sciences at the University of Manitoba.

Dr. Doupe and his team worked with staff at Riverview Health Centre and Deer Lodge Centre to explore the many questions associated with the chronic care programs at the two sites. "A key part of reform is talking with staff and understanding what works and what doesn't," he said.

The team's aims included: to better understand the profile of chronic care clients; to learn about the challenges faced by providers when caring for these medically-acute and functionally complex clients; and to develop a plan for enhancing the care provided while keeping the safety of care providers in mind.

The questions raised have no easy answers and there is no "one size fits all solution," Dr. Doupe says.

Chronic care patients typically have needs, such as intubation or dialysis, that are not well suited to personal care homes. However, that does not mean it is appropriate for them to stay indefinitely in a hospital.

One important finding from this study is that the chronic care system needs to let the rest of the health care system know the role they can play. "From a resident's perspective, high quality care requires both timely transitions between the different types of health care and excellent care at each of these stops."

The evaluation also compared the needs of chronic care residents to the kinds of care being provided.

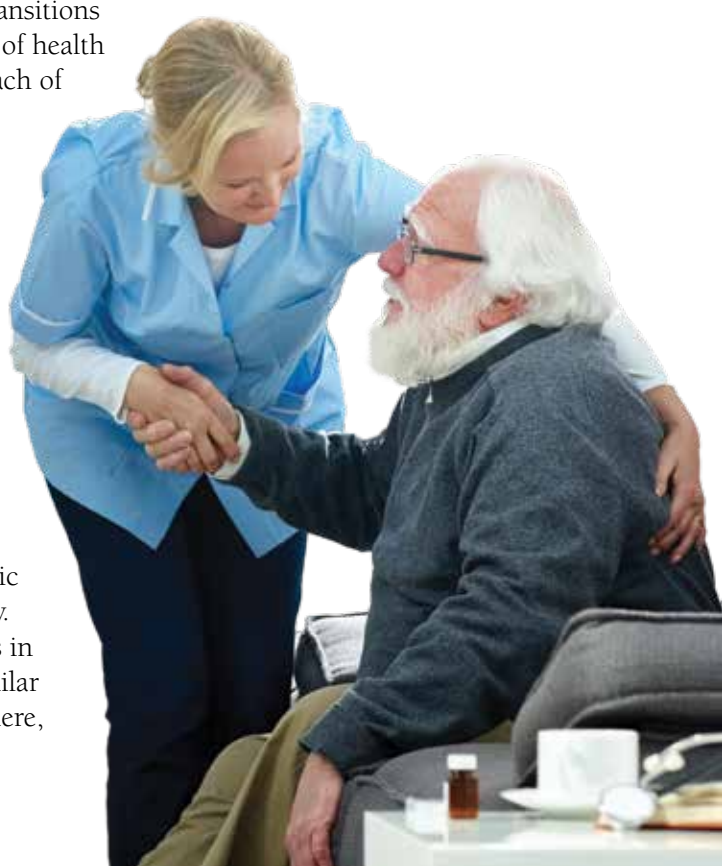
Dr. Doupe says that, not surprisingly, staff are looking for more frontline providers overall. Just as importantly, however, is the need to align the type of providers with the chronic care system care philosophy. While chronic care facilities in Winnipeg seem to have similar overall staff levels as elsewhere, it is important to recognize that some residents – particularly those with behavioural challenges – require extra and specialized care to make sure that they are supported.

Staff members also spoke about the need to provide both palliative and rehabilitative care to residents. Says Dr. Doupe, "These and other findings highlight the complexity of scheduling staff to support high quality care across residents with a wide range of needs."

INVESTIGATORS:

Malcolm Doupe, PhD, Departments of Community Health Sciences and Emergency Medicine, University of Manitoba

Erin Scott, BA, BA(Hons), MA, PhD Student, University of Manitoba



IDENTIFYING THE MISSING PIECES
In Community Rehabilitation


Kathryn Sibley

Once a patient is discharged from a rehabilitation hospital in Winnipeg, there are few – if any – formal systems for delivering further comprehensive community rehabilitation.

That's the finding of a study recently concluded by a team of researchers led by Dr. Kathryn Sibley, an associate professor in Community Health Sciences at the University of Manitoba.

Dr. Sibley's team interviewed patients, health care providers and administrators in Winnipeg for their perspectives. As well, they reviewed websites of service offerings across Canada to identify the goals, resources and processes of community rehabilitation services for adults at risk of institutionalization. The team also looked at published research concerning community rehabilitation.

Their goal was to examine how rehabilitation services for people in the community are organized and whether they are co-ordinated, continuous and integrated. They also wanted to determine whether the service delivery is patient and family-centred.

The team's investigation revealed a scarcity of information, fragmented rehabilitation services across Canada and a demonstrated need for these services in the community.

"The feeling on the ground is that once you get outside an institution, there really is no system for delivering rehab care at all. It's disjointed and there is no framework," says Dr. Sibley.

Based on their findings in Winnipeg, her team has looked at what works, what needs improvement and what's missing. They have drafted a conceptual framework for community rehabilitation that has been further refined following consultation with a number of managers, directors, frontline staff and patients.

The framework has one goal in mind: to organize and enhance the delivery of community-based rehabilitation services in such a way that it helps people stay at home instead of ending up back in the hospital.

Dr. Sibley's team submitted two papers documenting their study for academic publication and are writing two more to present their framework. The team is now working to share the framework with decision-makers so implementation across Manitoba can be explored.

This study was funded through the University of Manitoba Rady Innovation Fund.

INVESTIGATORS:

Kathryn Sibley, PhD, Community Health Sciences and Centre for Healthcare Innovation, University of Manitoba

Ruth Barclay, PhD, PT, College of Rehabilitation Sciences, University of Manitoba

Juliette Cooper, PhD, Occupational Therapy, University of Manitoba

Jeanette Edwards, Shared Health

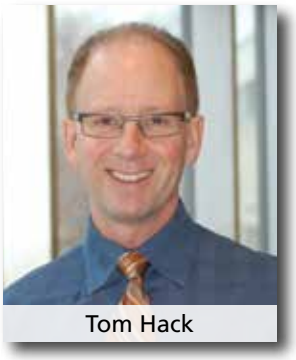
Lorna Guse, PhD, Nursing, University of Manitoba

Leanne LeClair, PhD, Occupational Therapy, University of Manitoba

Alan Katz, PhD, Community Health Sciences and Manitoba Centre for Health Policy, University of Manitoba

Jacquie Ripat, PhD, Occupational Therapy, University of Manitoba

COMPASSION:
From the Voices of Patients


Tom Hack

Compassion is an essential component of caring for those who are ill. That's why it's often front and centre in hospital mission statements.

But what exactly is compassion? How can it be measured? How can it be taught to health care providers? These are the questions a team of researchers, led by Dr. Tom Hack at the University of Manitoba and Dr. Shane Sinclair at the University of Calgary, have been asking in recent years.

The people they've been asking are the patients themselves.

Other yardsticks for understanding and measuring compassion already existed before this team began its work. But those yardsticks had a fundamental flaw: they were developed without input from actual patients, says Dr. Hack.

His team began its study by interviewing palliative cancer patients to determine how they understood and experienced compassion in clinical care. The research was used to craft a patient-driven definition of compassion. It states compassion is "a virtuous response that seeks to address the suffering and needs of a person through relational understanding and action." In subsequent research, this definition was validated by health care providers

Phase two of the project used the new compassion definition as a basis for developing a questionnaire that can be used with patients to measure the quality of care they receive. Funded through a Canadian Institute of Health Research Project Scheme Grant, it included patients from Riverview Health Centre.

To create the questionnaire, 616 patients living with incurable, life-limiting illnesses were recruited. Half of the patients provided feedback on an initial set of 54 questions. Those questions were refined further, and the second group of patients was involved in confirming the validity of items. This resulted in a final set of 15 questions to assess compassion in care.

All of the work completed to date is ground breaking because, says Dr. Hack, it has come "from the voices of patients."

The research team is now applying for a new four-year grant to develop a training program that will focus on helping caregivers better understand and provide the compassionate care their patients need and expect.

INVESTIGATORS:

Thomas Hack, PhD, College of Nursing, University of Manitoba; Psychosocial Oncology and Cancer Nursing Research, IH Asper Clinical Research Institute; Research Institute in Oncology and Hematology, CancerCare Manitoba

Shane Sinclair, PhD, Faculty of Nursing, Department of Oncology, Compassion Research Lab, University of Calgary

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Priya Jaggi, MSc, Compassion Research Lab, University of Calgary

Harrison Boss, PhD, Department of Psychology, University of Calgary

Susan E. McClement, PhD, College of Nursing, University of Manitoba

Aynharan Sinnarajah, PhD, Department of Oncology, University of Calgary

Genevieve Thompson, RN, PhD, College of Nursing, University of Manitoba

HIP FRACTURES:
To Fix or Not to Fix


Lorraine Peitsch

If a fit, independent older adult fractures a hip, surgical repair typically follows. Conversely, if an immobile older adult with advanced dementia fractures a hip, Canadian orthopedic guidelines suggest the fracture not be repaired, proposing a palliative approach instead.

But what about the gray area in between? How are decisions made regarding management of hip fractures in frail, elderly residents living in personal care homes?

That's what Dr. Lorraine Peitsch, Assistant Professor in Geriatric Medicine at the University of Manitoba, and her co-researchers wanted to find out.

They interviewed 30 nurses in five personal care homes, including Riverview Health Centre. After analyzing the data, some themes emerged.

One finding is that personal care home nurses don't typically discuss the pros and cons of hip surgery. However, they do recommend to the family that their relative be transferred to hospital for assessment – even if the resident has a comfort-care-only management plan.

The researchers also found that, once in hospital, surgery almost always takes place. While nurses assume that physicians and surgeons at the hospital discuss the risks and benefits of surgery with residents and families, it's not clear whether those discussions actually happen.

"Sometimes families are surprised when their relative comes back to the personal care home after surgery and isn't doing well," she says. "We don't know if that in-depth discussion with the surgeon – about risk of functional decline and mortality after surgery – has taken place."

Those discussions are critical because, due to frailty, personal care home residents are more at risk of complications and adverse effects from medical interventions. But it's also extremely difficult to predict which resident is going to do well post-surgery and which one isn't.

"Because there is no protocol for deciding who should get surgery versus who would benefit from a palliative approach, we think discussions are the best way to work through this complicated scenario," says Dr. Peitsch, adding that a subsequent study could involve interviewing physicians to learn more about what discussions happen at the hospital.

The bottom line, Dr. Peitsch concludes, is that people have a right to accept or reject the recommendation for surgical repair of a broken hip, but they also have a right to be well informed about the consequences of their decision.

INVESTIGATORS:

Lorraine Peitsch, PhD, FRCPC, Geriatric Medicine, University of Manitoba

Phil St. John, MD, MPH, FRCPC, Geriatric Medicine, University of Manitoba

Genevieve Thompson, RN, PhD, College of Nursing, University of Manitoba

Stroke Rehabilitation

For patients with stroke, rehabilitation is a vital process that enables them to develop the capacity to face, head on, the challenges of life after stroke. Rehabilitation clinicians are key to this process as they strive to help patients recover physical and cognitive function to the highest possible degree. To do this well, clinicians rely on research findings. Described here are some of the projects done by students, staff and Riverview Health Centre research affiliates that contribute to the body of knowledge in rehabilitation and stroke recovery.

PROGRESS IN STROKE REHABILITATION: Two Perspectives


Tolulope Atama

Physiotherapists regularly assess the progress made by stroke patients receiving rehabilitation. But even if the physiotherapist believes the patient's function is improving, how do the patients themselves think they are doing?

Tolulope Atama, a graduate student in the College of Rehabilitation Sciences at the University of Manitoba, wanted to find an answer to that question. The subject became the focus of her 2018 thesis, and to do her research, she came to the stroke recovery program at Riverview Health Centre.

At Riverview, 31 in-patient stroke patients who would be discharged home and six physiotherapists participated in her study.

Ms. Atama reviewed the established tools physiotherapists use to measure observed changes in stroke survivors' function. She also looked at the assessment tools patients use to self-report, one of which focuses on their recovery.

Both the patients and the physiotherapists identified some similar factors – such as having a supportive spouse/family, being able to walk with or without an assistive device, and participating in physical therapy – as playing a role in their recovery.

Ms. Atama concluded that, although the clinical tools measure observed function, they do not necessarily assess how patients perceive their own recovery. Her study showed that patients' responses were broader and included such factors as being able to actually achieve their recovery goals, the value of being in a rehabilitation facility and having good nutrition.

Her research indicates that it would be beneficial to incorporate self-reported tools that consider quality of life into an assessment. The reason? Sometimes there is a discrepancy between the patient's and the physiotherapist's view of recovery. Because of a growing emphasis on patient-centered care plans, a patient's perspective of their health is of utmost importance, explains Ms. Atama.

This information is also important to note on a patient's chart before it is turned over to the community-based physiotherapist who provides therapy after discharge; the additional information will aid in the continuity of care.

INVESTIGATORS:

Tolulope I. Atama, MSc, PT, Health Sciences Centre; College of Rehabilitation Sciences, University of Manitoba

Leanne Leclair, PhD, Department of Occupational Therapy, University of Manitoba

Sepideh Pooyania, MD, FRCPC, Division of Physical Medicine and Rehabilitation, University of Manitoba

Ruth Barclay, PhD, PT, College of Rehabilitation Sciences, University of Manitoba

OPENING THE WINDOW
For Continued Stroke Recovery


Sepideh Pooyania

It is known that recovery from stroke usually plateaus about six months after the stroke occurs. Researchers into stroke rehabilitation want to find a way for individuals to continue to improve motor recovery after that six-month window has closed.

Dr. Sepideh Pooyania is one of those researchers. Associate Professor in Physical Medicine and Rehabilitation at the University of Manitoba, she is examining whether fluoxetine (Prozac) can re-open the recovery window for individuals who have had a stroke.

Fluoxetine is an antidepressant that has the potential to help with motor recovery. Because it increases neuro-plasticity in the brain, researchers anticipate that it may enhance the effects of exercise on motor function.

"Studies have shown that, when fluoxetine is used in rats, the time it takes to plateau after a stroke is lengthened," says Dr. Pooyania. "We are hopeful that this drug will allow individuals to continue to improve motor ability when it is paired with task-specific exercise two to seven months post-stroke."

The study Dr. Pooyania is involved in is called *FLOW Trial: Fluoxetine to Open the Critical Period Time Window to Improve Motor Recovery after Stroke*. It is taking place in multiple sites across Canada, including Riverview Health Centre, where Dr. Pooyania is the lead.

For the study, 176 stroke patients, who have completed their initial rehabilitation, have been randomly divided into two groups of 88. Both groups will take part in a 12-week, three times per week exercise program. Only one group (the intervention group) will receive fluoxetine, with the other receiving a placebo. None of the participants know which treatment they will receive.

Study participants will be assessed by evaluators – who also do not know the treatment received by each group – at baseline, immediately following the exercise program and six months after the intervention. Evaluators will look at such outcome measures as knee strength, balance, walking ability, grip strength and more to see if there is a difference in motor skill improvement.

The search for study participants was underway at Riverview Health Centre, but in March 2020, COVID restrictions caused recruitment to be suspended. When restrictions are lifted, recruitment at Riverview will resume.

This study is being funded by the Stroke Recovery Network and Health Canada.

INVESTIGATOR:

Sepideh Pooyania, MD, FRCPC,
Division of Physical Medicine and Rehabilitation,
University of Manitoba

POST-STROKE REHABILITATION: How Much is Too Much?

In the post-acute stage of stroke recovery, rehabilitation exercise programs strive to help individuals regain their walking abilities to the highest possible level. However, is there an optimal amount of exercise, beyond which benefits are not likely to occur?

That is the question investigated by Dr. Sepideh Pooyania in the study, *Determining Optimal post-Stroke Exercise (DOSE)*. The study involved 75 participants from six Canadian inpatient stroke rehabilitation centres. As part of a cross-country team of researchers, Dr. Pooyania, Associate Professor in Physical Medicine and Rehabilitation at the University of Manitoba, led the portion of the study that took place at Riverview Health Centre.


Sepideh Pooyania

The study involved dividing the participants into three randomized groups, each receiving a different "dose" of treatment over a four-week period.

One group received the usual care. The DOSE 1 group underwent higher intensity physical therapy five days a week for one hour. For the DOSE 2 group, the daily sessions were lengthened to two hours of higher intensity physical therapy.

"We quantified the actual dose in each group using step counters and heart rate monitors," explains Dr. Pooyania.

Evaluators, who did not know the group to which participants were assigned, measured walking distance (among other indicators) using a six-minute walk test at two intervals: prior to starting the four-week intervention (baseline) and immediately following it.

At the end of the investigation, participants in both DOSE 1 and DOSE 2 demonstrated greater walking endurance compared with the control group. Significant improvements were also observed in the DOSE 2 group in gait speed.

Improvements in walking endurance from the DOSE intervention compared to usual care were still present one year later.

Along with these improvements in physical abilities, the study results revealed changes in the participants' quality of life. "Both DOSE groups reported that their quality of life had significantly improved compared with the control group," says Dr. Pooyania.

This study provided evidence that patients with stroke can improve their walking recovery and quality of life with higher doses of aerobic and stepping activity within a critical time period for neurological recovery. As well, these walking endurance benefits can be retained over the first year post-stroke.

The study was published in STROKE journal in 2020.

Funded by the Canadian Partnership for Stroke Recovery and Canadian Institutes for Health Research, this study is the first to systematically investigate the effect of exercise dose on walking recovery early after stroke. It sets the stage for future investigations to examine in further detail the optimal intensity of the exercise needed.

INVESTIGATOR at Riverview Health Centre:

Sepideh Pooyania, MD, FRCPC, Division of Physical Medicine and Rehabilitation, University of Manitoba

Predicting Success in Stroke Rehabilitation

More Canadians than ever before are surviving strokes, and as a result, the demand on limited rehabilitation and health care resources has increased.

While even the most severely affected stroke patients have the potential to benefit from rehabilitation, limited resources means that it's important to find a way to identify patients who are more likely to have a successful outcome. Dr. Alexander Wasserman, a resident studying physical medicine and rehabilitation in the Faculty of Medicine at the University of Manitoba, wanted to find a solution to this issue.

With funding from the Riverview Health Centre Foundation, he led a study to assess which stroke patients may have better outcomes following intensive stroke rehabilitation. This is important because the earlier some stroke patients are admitted to rehabilitation – and there is always a waiting list – the greater the functional improvements and the greater the likelihood those patients will be discharged home, rather than to a personal care home.

For his research, Dr. Wasserman reviewed the charts of 60 patients discharged from Riverview Health Centre to personal care homes and 182 patients discharged home between 2008 and 2017.

He found that patients who were older, lived alone prior to their stroke and had cognitive deficits, lower functional independence and balance problems were much more likely to be discharged to a personal care home. His study concluded that these data could form a pre-admission predictive model for determining community versus personal care home discharges after stroke rehab.


Alexander Wasserman

"To have a predictive model of the people who won't necessarily have the best outcomes is important," points out Dr. Wasserman. He explains why: "If there's a situation where somebody who, based on our criteria, has a good prognosis for community discharge, it's more useful to get that person into stroke rehab earlier."

The predictive model is another tool in the toolbox that can be used to realistically and fairly counsel patients and their families about ultimate outcomes. If they have this information before coming into an intensive rehabilitation process, some patients may choose to forgo it.

"It's intensive therapy that some people find tiring and challenging. If we can tell them right away that it's not likely to change the outcome – that they'll likely still end up in personal care – it can help patients and their families decide what to do," says Dr. Wasserman.

INVESTIGATORS:

Alexander Wasserman, MD, Division of Physical Medicine and Rehabilitation, Faculty of Medicine, University of Manitoba

Michelle Thiessen, MSc, University of Manitoba

Sepideh Pooyania, MD, FRCPC, Division of Physical Medicine and Rehabilitation, University of Manitoba

BEST PRACTICE INTERVENTIONS FOR STROKE:
Getting Information into Clinicians' Hands


Ruth Barclay

Regaining the ability to walk is a major priority for patients after a stroke. To assist a person to reach this goal, occupational and physical therapists use a range of treatment interventions.

But there is an issue of concern: rehabilitation clinicians don't always make use of the interventions found, through research, to be the most effective for improving patients' ability to walk.

"There are different reasons why these best practices are not used to the full extent," explains Dr. Ruth Barclay, Associate Professor at University of Manitoba's College of Rehabilitation Sciences. "For example, while therapists may be aware of the interventions, best practice guidelines may be too general and may not provide enough detail on how to best apply them."

Finding a way to encourage clinicians to use proven interventions is the aim of a pilot study in which Dr. Barclay is involved. The team, led by Dr. Aliki Thomas at McGill University and Dr. Michelle Ploughman at Memorial University in Newfoundland, includes researchers from eight Canadian universities and several rehabilitation hospitals. Participants include therapists from three stroke rehabilitation centres, with Dr. Barclay leading the project at Riverview Health Centre.

"The project involves sharing information with clinicians by email about four specific rehabilitation interventions for walking," says Dr. Barclay. "We want to see if this sharing will increase the clinicians' use of the interventions."

During this pilot study, clinicians receive information about how best practice guidelines for the four interventions can be implemented. Each site is randomized regarding the timing and frequency of the provision of information. For example, a site may receive information once per week for four weeks, another once per week for eight weeks, as well as other variations.

The emails include short paragraphs of information on the intervention, as well as how to implement it in practice (i.e. protocol). "Rather than a 'cook book' of instruction, we are providing material on how the guidelines can be used in different situations," says Dr. Barclay. "That's because clinicians have to take into consideration their own experience and patient preferences when deciding on how to implement the treatment."

Clinicians will have the opportunity to provide feedback on the value of the information they receive, its perceived impact on their clinical practice, the barriers experienced and the actual benefits for their patients.

The researchers hope that this pilot will provide an initial understanding about beneficial ways to disseminate information about best practices to clinicians, what information should be included, and the frequency and timing of delivery.

It is expected that this project will lead to a larger study to investigate supporting clinicians in their use of best practice interventions.

INVESTIGATORS at the Riverview Health Centre Site:

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Mindfulness and Quality of Life

For many individuals, health problems can be debilitating – not only physically, but mentally, too. But what if being mindful of one's abilities could help a person succeed in overcoming these challenges? What if looking at a barrier in a different way could help someone overcome it? Research that assists people in attaining a positive state of mind, leading to an improved quality of life, is an important area of study in health care. Riverview Health Centre welcomes projects with this focus, such as the one presented here.

IMPROVING PHYSICAL ACTIVITY, HEALTH AND WELL-BEING:
It's All in the Way You Think About It


Judith Chipperfield

Someone with a health problem may not be able to change that reality. However, with a bit of help, they may be able to benefit from changing the way they think about the problem and how they lead their daily life.

That's the premise of a study involving 44 seniors who were clients at Riverview Health Centre's Day Hospital program, many of whom were sedentary and had challenges being physically active.

Dr. Judith Chipperfield, Professor of Psychology and a research affiliate at University of Manitoba's Centre on Aging, led the study. It aimed to show that, with the right kind of teaching, maladaptive mindsets can become adaptive. In turn, adaptive and resilient mindsets may lead to improved physical activity, health and well-being.

For her study, Dr. Chipperfield created a 20-minute video to encourage adaptive mindsets among people facing physical activity challenges and to discourage them from thinking that inactivity is caused by such factors as having inherited the wrong genes or simply being too old.

Dr. Chipperfield acknowledges that old age contributes to the problem, but the video tells people not to focus on that because it is uncontrollable and demotivating. Instead, viewers are encouraged to focus on causes of inactivity that they can change, such as trying harder or developing new strategies.

For example, says Dr. Chipperfield, "You can use a cane when walking outdoors, or you can find a place where you can walk indoors."

To begin the study, the researcher identified the reasons seniors gave for being inactive. These included being too old and inheriting bad genes, as well as claiming the weather was not good or the task was simply too hard. Psychological mindsets were identified by grouping reasons as internal/external and controllable/uncontrollable.

Next, after physical and mental health status were measured, all participants were outfitted with accelerometers to track their everyday physical activity at home over the course of a week. After that, half of the participants were shown the video. Then all the measures were repeated and participants wore the accelerometers again.

Dr. Chipperfield and her team have analyzed some of the data and found an improvement in psychological mindsets and well-being for participants who watched the video compared to those who did not.

"Overall, we hope these results will empower older adults to adopt an adaptive, resilient mindset, and that this will promote quality of life."

Funding for this project came from the Social Sciences and Humanities Council of Canada and the Canadian Institutes of Health Research.

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